Explanation of Significant Differences

ROWE INDUSTRIES SITE

VILLAGE OF SAG HARBOR
Suffolk County, New York

EPA
Region 2

December 2004

INTRODUCTION

In accordance with Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Section 300.435(c)(2)(i) of the National Oil and Hazardous Substances Pollution Contingency Plan, if after the selection of a remedial action plan, a component of the action differs in any significant respect from the original action, an explanation of the significant differences (ESDs) and the reasons such changes were made must be published.

The 1992 Record of Decision (ROD) for the Rowe Industries site, as modified by a May 2001 ESD, called for, among other things, the extraction and treatment of contaminated ground water and air sparging and focused pumping to remove contaminants from the ground water underlying the source area. To improve the removal rate of the residual ground water contamination underlying the source area, an enhancement of the ground water remedy will be employed.

This ESD will become part of the administrative record file for the Rowe Industries site. The entire administrative record for the site, which also includes the Remedial Investigation Report, Feasibility Study Report, ROD, Proposed Plan, and other reports and documents related to the site, is available for public review at the following location:

John Jermain Library
Main Street
Sag Harbor, NY 11963

The Administrative Record file is also available for public review at the EPA Region II office at the following location:

U.S. Environmental Protection Agency
290 Broadway, 18th Floor
New York, New York 10007-1866
Hours: 9:00 A.M. - 5:00 P.M. (*Monday - Friday*)

The changes to the selected remedy are not considered by EPA and the New York State Department of Environmental Conservation (NYSDEC) to have fundamentally altered the remedy selected in the ROD. The remedy remains protective of human health and the environment.

SUMMARY OF SITE HISTORY, CONTAMINATION PROBLEMS, AND REMEDIAL EFFORTS

The Rowe Industries site is located on Bridgehampton-Sag Harbor Turnpike, in the Village of Sag Harbor, Suffolk County, New York, approximately 75 miles east of New York City.

The site contains an eight-acre industrial facility. The most prominent feature of the site is a small factory covering one acre of the property with the remainder containing a lawn area, parking lot, woods and a small pond. Residences are located on two sides of the facility.

The site is underlain with mostly medium to fine sand with some gravel and clay. Sag Harbor Cove is about 3,000 feet northwest of the site. Ligonee Brook, which flows into Sag Harbor Cove, is to the east and north of the site.

The Rowe Industries facility was constructed in 1953 to manufacture small electric motors and transformers. Chlorinated solvents were used to degrease oil-coated metals during the manufacturing process. Waste solvents were discharged into on-site dry wells and/or stored behind the facility, where they leaked into the soils below. The original building was completely destroyed by a fire in 1962, and was rebuilt that same year to twice its original size.

In November 1965, Aurora Plastics purchased the plant and its equipment from Rowe Industries. The manufacture of the motors continued and Nabisco acquired Aurora Plastics in the early 1970's. The facility remained active until 1974, when Nabisco relocated its operations and the building was closed.

The building remained shuttered until it was sold to Sag Harbor Industries in 1980. The facility is currently used to manufacture electronic devices. Solvents are no longer used in the manufacturing process.

Ground water contamination was first discovered by the Suffolk County Department of Health in 1983. Water from a private well near the site revealed contamination by three solvents, 1,1,1-trichloroethane (TCA), 1,1,2-trichlorethylene (TCE), and tetrachloroethylene (PCE). Further investigations determined that a ground water contaminant plume extended from the former Rowe Industries facility northwest to Ligonee

Creek and Sag Harbor Cove. Based on the extent of ground water contamination, the Rowe Industries site was placed on the National Priorities List on July 7, 1987.

In September 1988, EPA and Nabisco entered into an Administrative Order on Consent, Index No. II-CERCLA-80213, for the performance of a remedial investigation and feasibility study (RI/FS) to determine the nature and extent of the contamination at and emanating from the site and to identify and evaluate remedial alternatives.

The results of the RI/FS indicated the presence of volatile organic compound (VOC) -contaminated soils on the facility grounds, VOC-contaminated soils within three dry wells, VOC-contaminated ground water underlying the site, and a VOC-contaminant plume extending northwest from the on-site contaminated soil area to Ligonee Creek and Sag Harbor Cove. On September 30, 1992, a ROD was signed. The major components of the selected remedial action in the ROD are:

- Excavation and off-site disposal of approximately 230 cubic yards of volatile-organic-contaminated soils within the former drum storage area (FDSA) (a portion of the former drum disposal area is located on adjacent residential property).
- Excavation and off-site disposal of approximately 135 cubic yards of contaminated sludge and underlying soils associated with the dry wells.
- Confirmatory sampling to ensure that soils with concentrations above soil cleanup objectives have been excavated.
- Backfilling of the excavated areas with clean fill after excavation.
- Remediation of the ground water by the installation of seven extraction wells which will pump the contaminated ground water to an air stripping treatment system with ultimate discharge of treated water to Sag Harbor Cove.
- Implementation of a monitoring program that includes the collection and analysis of the influent and effluent from the treatment system, and long-term monitoring of the ground water to track the migration and concentrations of the contaminants of concern.

Nabisco, Inc. and Sag Harbor Industries agreed to design and implement the selected remedy. A Consent Decree formalizing this settlement was entered by the District Court for the Eastern District of New York in April 1994. Soon afterward, Nabisco's consultant, Leggette, Brashears & Graham (LBG), commenced preparation of the remedial design work plan and related planning documents.

Based on soil sampling data obtained as part of the soil remedial design, the volume of contaminated soils from the former drum storage area requiring excavation increased significantly from the ROD estimate. It was also determined that approximately half of the excavated soils were more highly contaminated than originally believed which would necessitate on-site pretreatment prior to off-site disposal in order to comply with the requirements of Resource Conservation and Recovery Act Land Disposal Restrictions. Based on these new findings, in July 1997, EPA issued an ESD which modified the selected remedy for contaminated soils. The changes to the remedy included the treatment of the unsaturated soils (above the water table) in the former drum storage area using in-situ soil vapor extraction (SVE)[1] instead of excavation, and treatment of the saturated soils (below the water table) using air sparging to enhance the effectiveness of the ground water extraction and treatment system[2].

The dry wells and the contaminated soils associated with the former drum storage area were excavated in 1998 and the soil was completely treated by April 1999 using an on-site ex-situ SVE system. Off-site disposal of the dry well sludges and treated soils followed. The in-situ SVE system and air sparging systems were also installed in 1998. The in-situ SVE system operated from December 1998 until January 2004. Confirmatory soil sampling results have indicated that soil cleanup levels have been achieved.

EPA conducted focused pumping of a small area where ground water samples indicated elevated levels of VOCs. Soil and ground water samples collected as part of the installation of the in-situ SVE system revealed a layer of natural clay (clay lens) near the top of the water table within the former drum storage area. The ground water flowing above the clay lens was contaminated with levels of VOCs as high as 9,700 micrograms per liter (µg/l) (the ground water standard for individual VOCs in ground water is typically about 5 µg/l). To clean up this hot spot, four small ground water extraction wells were installed in this area. The extracted ground water was treated on-site and discharged to an on-site pond.

The air sparging system operated from February 2003 to January 2004 and the focused pumping wells operated from March 2001 until January 2004. Both systems were shut

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1 SVE involves drawing air through a series of wells to volatilize the solvents contaminating the unsaturated soils. The extracted vapors are then treated in an activated carbon unit and monitored before being vented to the atmosphere. In-situ SVE leaves the soils in place while they are being remediated.

2 Air sparging involves bubbling air below the water table to volatilize the solvents contaminating the ground water and soils. The volatilized solvents are drawn up through the unsaturated soils by a series of SVE wells. The extracted vapors are then treated in an activated carbon unit and monitored before being vented to the atmosphere.

down when the rate of VOC removal dropped to very low levels.

The installation of nine ground water recovery wells along the length of the ground water plume was completed in mid-2000.

In May 2001, in response to public concern regarding a freshwater discharge into a saltwater environment, EPA issued an ESD outlining its decision to reduce the amount of treated ground water discharged to Ligonee Creek and Sag Harbor Cove by splitting the discharge between two locations—Ligonee Brook[3] at its intersection with Bridgehampton-Sag Harbor Turnpike and a recharge basin that would be constructed on Sag Harbor Industries' property. Since pumping the contaminant plume will reduce the natural ground water flow to Ligonee Creek and Sag Harbor Cove, the treated ground water discharge to Ligonee Brook was intended to replace this flow. It would have also facilitated the creation of a wetland called for in the Village of Sag Harbor's Local Waterfront Revitalization Program.

At public meetings held in May, June, and July 2001, the public voiced concern regarding the discharge of any treated water into Ligonee Creek and Sag Harbor Cove. In addition, an examination of the proposed location for the on-site recharge basin by herpetologists revealed that it was a prime habitat for the tiger salamander, which is included on New York State's endangered species list. As a result, EPA evaluated several off-site locations for the construction of a recharge basin. Based upon this review, it was determined that the best location was a portion of a 7.6-acre Town of Southampton-owned property located adjacent to the Sag Harbor Industries property. On December 12, 2001, the Town of Southampton and Nabisco entered into an agreement to allow a recharge basin to be built and operated on this property. EPA issued an ESD in December 2001 to finalize the decision to discharge the treated groundwater into a recharge basin constructed on Town of Southampton property. Following full scale testing of the ground water pump and treat system, full system startup began in December 2002.

DESCRIPTION OF SIGNIFICANT DIFFERENCES AND THE BASIS FOR THOSE DIFFERENCES

The ROD, as modified by the May 2001 ESD, called for the contamination within the saturated zone of the FDSA to be treated via air sparging and focused pumping via four small recovery wells, in combination with downgradient ground water extraction and treatment.

The air sparging system and the focused pumping system operated until January 2004. After removing close to twenty pounds of VOCs, both systems were shut down when the rate of VOC removal dropped to very low levels.

In order to address the residual contamination, alternative ground water technologies were evaluated and a pilot-scale study was performed to evaluate the effectiveness of one of the more promising technologies. This pilot-scale study involved the injection of EHC-L, a patented mixture of ground zero-valent iron ~~(iron ground into nanoparticles)~~ and a food-grade organic carbon source. This technology combines biological stimulation and chemical reduction.

Based upon the results of the pilot study, which showed a significant decline in VOC concentrations, it was concluded that this technology, in combination with downgradient ground water extraction and treatment, offers the most technically feasible approach to restoring groundwater quality in a reasonable time frame[4].

SUPPORT AGENCY COMMENTS

NYSDEC and the New York State Department of Health, after careful consideration of the modified remedy, support the modified remedy due to the environmental, public health, and technical advantages, and the fact that the modified remedy significantly changes but does not fundamentally alter the remedy selected in the ROD as modified by the May 2001 ESD.

AFFIRMATION OF STATUTORY DETERMINATIONS

Considering the new information that has been developed and the changes that have been made to the selected remedy, EPA and NYSDEC believe that the remedy remains protective of human health and the environment, complies with federal and state requirements that are applicable or relevant and appropriate to this remedial action, and is cost-effective. In addition, the modified remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this site.

PUBLIC PARTICIPATION

EPA and NYSDEC rely on public input to ensure that the concerns of the community are considered in selecting an effective remedy for each Superfund site. Questions or comments related to the ESD or the planned construction activities can also be directed to:

Pamela Tames, P.E.
Project Manager
U.S. Environmental Protection Agency
290 Broadway, 20th Floor

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[3] Ligonee Brook discharges into Ligonee Creek.

[4] Based upon preliminary modeling results, it is estimated that it will take XX years to remediate the aquifer downgradient of the landfill using this technology in combination with the downgradient extraction wells, as compared to an estimated XX years for downgradient ground water extraction alone.

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